South Bay TRS-80® Users Group

DYNAMIC MEMORIES ™

®™ Tandy Corp / Radio Shack Inc.

Nov.

SOUTH BAY TRS-80 USERS GROUP

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> **LOOK--PAY ATTENTION**--*the next SBUG meeting will be held at the Round Table Pizza restaurant (yes, pizzas are served in restaurants.) This is at the corner of Moorepark and Saratoga Ave. near the Saratoga exit from 280. The January 21st meeting will once again be in the Cupertino library.*
>
> *Time: 7:15 - 9:30 PM*
>
> *The next 3 meetings will be held on November 19, December 17, and January 21.*

The editor will resume his conferencing for his peers, the semi-educated. The principal speaker will be from HITACHI, and he will tell us all the latest about printers. (Mostly HITACHI, but what did you expect? IBM?
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LOOK!OJOIREGARDEZ!::Owing to the loss of the Dyson auditorium, we are still trying to revitalize the SIGS. Specifically, we wish to have a model 100 group, a CP/M group, and a MSDOS group. Gather your brethren around you and **••**do your thing to get them going.

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MEMBERSHIP

If you wish to become a member of SBUG and start receiving our newsletter "DYNAMIC MEMORIES", then send $18 (check or money order) to the following address:

      South Bay TRS-80 Users Group
      P.O. Box 60116
      Sunnyvale, Ca.94088

or come to one of our meetings. If you also wish to communicate with our bulletin board system (SBUG-80) then include an additional $25 (a one time fee) for an account on the system. You must be a member of SBUG to have an account on the system. Please include your address and phone number.

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THE EDITOR'S BYTES AND BITES

We are back, as royalty and Johnny Carson like to say. I regret that I cannot bring you an indepth report on European computerization. From a very cursory and superficial look, computers inspire the same awe that they did here two years ago. Hewlett Packard has a presence in France, the Japanese are everywhere.

The British have a busy, innovative computer industry, the French do not. The bowling center I played in in Sweden had a computerized system marketed by AMF identical to the system at McKee Bowl where I make all my strikes.

Denmark, which was once a province of Radio Shack, has gone IBM.

We regret that we have no further information for you, but we were busy with other things, like good food and good wine.

This was last month's page 2. Perhaps maturity has lent it grace. If so, I will macerate all my writings.

South Bay TRS-80 Users Group

Financial Statement

October 17, 1985

	October	Y-T-D	% Used	Budgeted
CASH RECEIPTS:				
Dues: Sbug	54.00	1431.00	79.50	1,800.00
Interest				
Earned	0.00	30.35	11.50	264.00
Disk Library	0.00	105.00	87.50	120.00
Dues: Sbug-80	25.00	150.00	25	600.00
Documentation	0.00	0.00	0	264.00
Tape Library	0.00	0.00	0	0.00
80 Micro	0.00	136.00		0.00
Receipts Total	79.00	1,852.35	65.59	2824.00

ADMINISTRATIVE DISBURSEMENTS:

	October	Y-T-D	% Used	Budgeted
Documentation				
Library	0.00	0.00	0	80.00
Telephone	00.00	58.19	29.10	200.00
Utilities	0.00	80.00	33.33	240.00
Disk Library	00.00	214.97	71.66	300.00
Miscellaneous	0.00	0.00	0	100.00
Postage	00.00*	118.00	23.60	500.00
Printing	00.00	886.32	88.63	1,000.00
Bank charges	0.00	20.00	66.67	30.00
Post office box	0.00	26.00	50	52.00
Sbug80 Repairs	0.00	0.00	0	200.00
Disbursements				
Total	00.00	1,403.48	53.98	2,600.00
Begin.Cash bal.	599.14	229.27	100	229.27
Net receipts	79.00	448.87	200.39	224.00
End. Cash bal.	678.14	678.14	149.61	453.27

NOMINATIONS

November will be the month for the all important naming of the slate of possible steering committee members. My inclination as to the past members of the committee is to say "Throw the rascals out!" Of course that's up to you. Do come to the nominating meeting in November, and to the election meeting in December. If you don't vote, if you don't take part, you have no one to blame but yourself when you find yourself confronted by a Hitler, or his mirror image Stalin.

ON BULLETIN BOARDS (SBUG-80)

At the last meeting it was decided to name (elect) Don Rhodes as SYSOP. This of course is contingent on the outcome of the December elections. In the meantime, it is to be hoped that we will shortly have the board up and running. Lack of the board does a great deal of damage to the club. Conversely, I am certain that once we get it going under the capable stewardship of Don Rhodes, that SBUG will once again flourish. We haven't died, but we have wilted a little around the edges.

NEW PROGRAMS
by Editor

I am currently in receipt of 3 new programs--SUPERLOG4, a sort of text editor which resides in memory, AIDS+II an update to this ominously named but excellent program, and CREATOR for the Model 4.

All of my opinions on these programs are based on very sketchy study as of this moment. In the case of SUPERLOG4, I am wondering if I got anything I didn't already have with the excellent word processor, ALLWRITE. So far I can only say that as it resides in memory, it may be called up, and print out done very quickly, much more quickly than with ALLWRITE which has to load a formatter from disk (or have the formatter previously loaded into memory). Their boast is their)cut and paste(function which I will have to give more study. To date I know that SUPERLOG4 can reside in memory simultaneously with PRONTO which gives rise to some interesting possibilities.

Both PRONTO and SUPERLOG4 files can be accessed by ALLWRITE. (PRONTO files come out slightly garbled) I will have to find out if SUPERLOG4 will access PRONTO files. I am sure that PRONTO's)import:export(function will access SUPERLOG4 and ALLWRITE.

Currently I have a shapeless file which I must update every day and frequently during the course of the day. I do it quickly with SUPERLOG4, and then get on with whatever else I have to do. It appears that SUPERLOG4 will serve me, especially if the)cut-and-paste(operation is handy.

I will do a full review, once I am more familiar with SUPERLOG4. On this score, it has occurred to me that most of you have read reviews in 80MICRO and elsewhere of the programs that are reviewed in DYNAMIC MEMORIES. There is an important difference in these two types of reviews. The people who write in the magazines are professionals. They

tend to rate the programs they review from a programmer's point of view. Most of us who write in *DYNAMIC MEMORIES* see programs from an entirely different point of view--will they serve us, how hard are they to learn, do they forgive us our sins of omission and commission?

AIDS+II as I said above is an update. My very cursory reading of its excellent manual hasn't shown me anything that I didn't have before. More on that later, too. As common as data base programs are, I do find it surprising that there are not more users of this program in our group. It is limited as to the number of records it can maniuplate, by the fact that it works out of memory--48K as in Model III. Had they taken the trouble to write it over to Model 4 with 128K as was done with VISICALC, they really would have had something. More on this later too, once I've had a chance to check it out.

The CREATOR is a program of a different color. Written in BASIC, this version for the Model 4 is supposed to run very fast. It can also be compiled. If you think you know BASIC, you don't know a thing until you've seen a Bruce Tonkin program. The CREATOR is a program generator. I shall interrupt myself here to make comparisons of programs.

The PRODUCER is also a program generator. Wright Huntley who has used it, likes it. I've never been able to use it. LITTLE BROTHER is a data base program. It's just plain hard to learn and I still haven't used it. In the case of the PRODUCER, it may be sloth on my part, and I am not about to argue with a man who is always Wright. In the case of LITTLE BROTHER, others agree that the manual is badly written. The 3 disk system is obviously complicated. If I had a necessity for a file with 65,000 records, then I would certainly learn LITTLE BROTHER, but fortunately I don't have a file like that.

I have CREATOR for the Model III, CP/M, and now for the Model 4. Just as I was getting the hang of it, I traded up to the Model 4. So I bought the CP/M version of CREATOR. It turns out I don't like CP/M. Now I have the Model 4 version. Why did I bother? If you have a computer, you will inevitably need specialized programs. Some you can buy, or if you're a programmer, write yourself. For most of us, it is easier to buy than to write. If you have a CREATOR, you can write these programs in a relatively short time, tailored to your specific needs.

The CREATOR is very sophisticated. Anything that BASIC will do, it will do. BASIC is sophisticated. You cannot do anything in FORTRAN, COBOL, or C, that you cannot do in BASIC. The difference is in the speed of operation, and the amount of code. My company needs a program that will support if, and, or. Only the more expensive data base programs will do that. (VISICALC will, but it won't handle this application properly). I expect to write the program using the CREATOR.

I am still pantingly awaiting my memory board (256K). I trust that with godfather's (Bernie Thompson) help, it will be up and running so I can report to you for the December issue.

From TNT SOFTWARE USER'S NEWSLETTER: ISSUE 9

"--Speaking of the Model IV, I found out that machine did NOT permit record lengths in excess of 256, contrary to my earlier belief. The difficulty is not in the BASIC, but in LDOS (TRSDOS 6.x). It seems that LDOS keeps track of the record length in the directory, and allocates just one byte for the purpose. Thus, the maximum possible record length is 256.

"I couldn't believe it. CP/M, MSDOS, the Mac's FINDER, and UNIX manage to be competent operating systems, and none of them keep track of the record length. Why should they? They keep track of the file size, that's all. The record length is up to the user, and that's a good approach. After all, just because I once opened a file with a record length of 50, doesn't necessarily mean I wouldn't like to open it with a record length of 100 the next. In fact, if I want to speed up disk accesses for particular purposes, I may well want to open the file with sa record length of 5000.

"Even if the DOS wanted to keep track of the record length, why must it report a fatal error when you try to open the same file with a different one?

"Only TRSDOS-like operating systems prohibit that approach. It's a shame that LDOS had to cripple Microsoft BASIC 5.2, especially since LDOS makes such a big deal of how sophisticated it is. For my money, it's not as good as CP/M, MSDOS, or UNIX. I'd even rather run NEWDOS, DOSPLUS, or TRSDOS than LDOS.

"So I had to scrap the whole Model IV project at the last minute and adapt the Model III version for the Model IV. That slowed me down about three weeks and introduced some of the bugs that made me replace the copies.

The net result was that you can have record lengths in excess of 256 with the new programs on the Model IV; each chunk of your file up to a maximum of 256 bytes will be in a different segment, though, just as it is for the Model III. The total number of segments allowed is limited by the number of files you can have open and how large your program is. Certainly you should be able to use record lengths in excess of 1024 unless you use a large number of fields. I'd think you'd be able to use about 100 fields before running out of memory, but it all depends on the kinds of fields, the length of the prompts and error messages, the record length, and the amount of memory you have.

The segmentation can cause a problem when running the sort. Before you run the sort, you'll need to determine which segment your data is in. ------------"

EDITOR: As a programmer, Tonkin has to be right about TRSDOS 6.2, (which is LDOS), for a user it's an excellent DOS.

"Charles Gelsinger sent me a program listing in Z-80 assembler for the TRS-80 Model I-III (it might be modified for the Model 4, I think) which should work very much like LP does on CP/M systems. In other words, you input a command line with numbers on it, and the program will output the codes corresponding to the ASCII values of the numbers to your printer. The program is well-commented, and appears to be well-designed; though it may be of rather specialized applicability, at least some of you should find it worthwhile. I considered printing it in the newsletter, but it would take up a little too much room. If you'd like a copy of the listing, send me a self-addressedd stamped envelope and I'll mail you on.

"Or, send me $5 and I'll send you a copy of the program on disk: this is a program Mr. Gelsinger has placed in the public domain, so I'm not looking to make any money from it. Please state format desired: Model I or Model III TRSDOS only, please. I'm waiting for Mr. Gelsinger's disk as of this writing, so please be willing to wait for the program.

"The Model 1000 continues to have difficulty in formatting disks. Tandy has promised that the fix is available for only $15; it consists of a small board to insert into the machine, and a half-dozen jumpers for the motherboard to fix some design errors.

"New machines are supposed to have the fixes applied at the factory, and I have taken some of the supposedly 'bad' drives from my machine to those newer machines and had the drives function perfectly. It looks like the Model 1000 is fixed, but I'm not very happy with the situation. Why would Tandy release a machine with so many problems, and ship 100,000 or so of them without so much as notifying the users via mail of the problems and fixes? I won't even do that with my software!

"There are two new items of interest. The first is Microsoft's new BASIC compiler for MSDOS computers. It's called Quick BASIC, and it's priced at $99 (retail). The price is interesting enough, since Microsoft has never sold any compiler for less than $300 before.

"What's more interesting is what it supports. Added are multi-line functions, support for all of memory (no more 64K programs, 64K data), global and local variables, subprograms, parameter passing between programs, support for DOS commands while within compiled BASIC programs, subdirectory support, networking, windowing, labelled addresses (line numbers are no longer needed), and an awful lot more.

"It sounds very interesting. So interesting, in fact, that I ordered two copies; it took three weeks, but I finally got them. The documentation is very skimpy, the compiler needs a lot of memory, you're still limited to 64K program per module, and BIOS calls aren't supported, but it's a good-quality program at a nice price. Get a new manual or a good book for IBM PC BASIC, then buy the compiler. It's good; better then the previous version that sold for $395, even if the documentation is a lot worse.

"If you've always wanted to buy a BASIC compiler, but couldn't afford the cost, I think you ought to buy the new one. You ought to be able to find it discounted below $99 in a lot of places; just call one of the big mail-order houses and ask them for their best price...............

"The next item needs a lot of analysis.

"In the last issue of this newsletter, I mentioned how much I'd like to see a 68000-based machine that could emulate the IBM PC instruction set.

"Well, someone else must have had the same idea. That someone is Commodore. The new Commodore Amiga will be able to run IBM software by emulating the 8088 instruction set in software;from what I've heard, the present version runs the software somewhat more slowly than a standard PC, but Commodore has promised that when the software is released, it will run just as fast as a PC; with a 12 MHZ or 16 MHZ 68000 or 68020, it should run IBM PC software about as fast as an AT does. Native-code software should bury the AT.

"Further, Commodore's Amiga does use a mouse and icons like the Mac, but you can disable either and use an operating system that looks something like MSDOS, if you wish. The resemblance is only superficial, and not all operations can be done with commands, but at least you can get away from the dreaded mouse (sometimes) if you hate it as much as I do.

"Unlike the Mac, the screen, disk, and sound are handled in hardware by dedicated chips; that makes the Amiga quite a bit faster than the Mac at putting things on the screen and playing sounds, and it should speed up disk accesses as well. The DOS can read a whole track at a time.

"The Amiga does support color, and its architecture permits the subsidiary processors to operate without slowing the 7.16 MHZ 68000 (again, unlike the Mac). That allows the Amiga to simultaneously update the screen, play sounds, and perform computations.

"Speed is further enhanced, it's claimed, by running the system's memory at twice the CPU's clock speed; a little arithmetic shows that the RAM chips must be rated at 70 nanoseconds or less (actually, they should be around 60 or 65) in order to run at 14.32 MHZ. The fastest dynamic RAM chips I've seen have access times of around 120 ns. and they're about 90% more expensive than the more common 200 ns. chips. You can buy 4K static RAM chips rated at 55 ns. for about $4.00 each; thats about 16 times as expensive per K as the 200 ns. dynamic RAM chips, and static RAM chips use a lot of power and run quite hot. Both factors suggest the 55 ns. chips aren't being used in the Amiga. Something doesn't smell right.

"I suspect what Commodore means is that the memory is accessed by the supplementary processors in between the accesses by the 68000; that would allow the chips (maybe) to be the more standard 120 ns. ones. Can a hardware expert suggest some possible solutions?

"The Amiga comes with a version of Microsoft BASIC, and can read or write both 3.5 and 5.25 inch disks. Macro assembler, C, and a 20 megabyte hard disk have all been announced. Yeah, it will run Pascal, but who cares? Everyone who's read this newsletter for more than a few issues will know very well how I feel about Pascal in any form. Yechh!

256K of memory is standard (user expandable to 512K), and up to 8 more megabytes can be added externally. Unlike the new Atari and the old Mac, the Amiga is expandable and has provisions for all kinds of peripherals, including up to four floppies. The price: about $1300, not counting a monitor.

"So far it sounds pretty good; maybe even very good to excellent, but there are a few flies in the ointment. The first problem is that the Amiga is going to have a rather limited distribution. Don't look for it in your local Computerland any time soon.

"The second is that there have already been stories about the machine's lack of (software) reliability. This can only be expected in such a new machine (not even released yet).

"The third problem is in the DOS.

The DOS for the Amiga is about 20K too big to fit into the 192K of ROM space set aside for it. From what I've heard, it was written in C. Now, I like C. But I think writing a DOS in any high-level language is a big mistake. For one thing, the DOS will be slower and larger than it needs to be. With the Amiga, it looks like the "bigger" is the worst problem.

"That means the DOS will need to be loaded from disk when the Amiga is booted. It will take a while to load 200+k bytes from disk, but that's really not the problem. The problem is that the Amiga comes with one drive as standard. That means that over 200K bytes on a system disk will be unavailable for data. The disk's capacity will be about 880K (901,120 bytes). But I think 200K is a big chunk to lose.

"Another problem is that, since the DOS won't be going into the dedicated ROM area, it will use up 210K of the 512K set aside for user programs. That makes the Amiga effectively a 320K machine; a standard 256K Amiga may have only about 46K left! "Perhaps Commodore will put RAM where the ROM should go. If so, that could make things pretty interesting. At least one software vendor is preparing a DOS plus BASIC package for the Commodore and the Atari. The package is slated to sell for about $50, and will junk the mouse and icons entirely. If the Commodore comes with 192K of RAM in address space allocated to the operating system, it will become attractive for a number of manufacturers to produce alternative DOSes for the Commodore.

"The DOS problem is something we really don't need, though. Here we've got this nice little machine built around a 68000 chip with a lot of the goodies people have been wanting. What does Commodore give us? Yet another proprietary DOS. We could end with the TRSDOS situation all

over again; equivalents for *NEWDOS, DOS PLUS, DOS,* and a dozen other replacements, none of them compatible.

"Hey, if IBM can use a generic *DOS* and allow others to license it from Microsoft, why can't Commodore license a non-proprietary *DOS* or pay someone like Microsoft to write one for them? It seems to me that Commodore is being more than ordinarily stupid; part of the popularity of the IBM PC is due to its non-proprietary DOS and open architecture.

"*MSDOS* isn't solely an IBM product; neither is *GW BASIC*. Every IBM PC has at least some expansion capability, and there are a lot of board manufacturers making a good living supplying such boards.

"At least the Amiga has some hardware expansion capability, even if most of it is outside the basic box. By going to a proprietary DOS, Commoddore has virtually guaranteed that there will never be the diversity of applications, languages, and games for the Amiga as there are for the IBM.

"Their production of an MSDOS emulator is at least an attempt to rectify the problem, but it doesn't really address the issue. If you're going to emulate the IBM, why not make it easier to move IBM software over to the 68000 chip, where it will run better? In short, why not use an MSDOS-like DOS for the 68000 chip in the first place?

"IBM did something a lot like that with the original IBM PC; their DOS had exact equivalents for every single DOS function in CP/M, with parameters being passed in equivalent registers and results being returned in the same fashion as for CP/M. That made moving applications over the the IBM PC a comparatively easy job, and encouraged a lot of developers to put applications on the PC.

"That may be too easy a lesson for Commodore to understand.

"Rather than learn from the successes of the IBM PC and of CP/M machines before it, Commodore has tried to imitate the much less successful model of the Maacintosh. If Commodore doesn't completely drop the stupid icon and mouse interface, I predict less than spectacular sales for the Amiga. Their only saving grace is that the icons can be disabled, at least for some operations.

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TANDY OR IBM CLONE?

by Don Rhodes

When you decide to join the ranks of MSDOS users, there is much to be considered. There are IBM PCs, XTs, TANDY, COMPAQ, PANASONIC, KAYPRO, AT&T and so on and so on and so on.

It seems that with most prospective buyers the question is "Is the machine compatible with the IBM PC?" In other words, whichever machine

is purchased, the desire is that it run all programs written for the IBM. And then some. Hope springs ---"

Never before in the history of microcomputers have there been so many programs written for a given DOS. The only close competitor is CP/M, which dates back to the misty beginnings of our arcane science.

For most home-brew computerists, the major consideration is affordability. Next come compatibility and capability, in that order. Those who bought APPLES and TRS80s are now faced with being left behind by all those who are now using IBMs or its clones. APPLES and TRS80s didn't cost as much, relatively speaking. Back in the good? old? days, one could purchase those machines for around $1200. Today they are under $1000. A bare bones IBM PC will cost about $1700.

If you purchased an APPLE or TRS80 during the last couple of years, it is hard to turn around and invest the same amount plus 50% in another computer. (Editor's interjection--groan, mumble, expurgated). After all, $1700 is a major purchase. It would make a good down payment on that shiny new car you were looking at yesterday. Unfortunately, computer dealers won't let you trade up using your old computer as part of the initial payment.

If you have decided to keep your APPLE or TRS80, don't feel badly, it is a good machine, and anyway all your files and documents are set up on it, and you have settled on the few good softwware programs that really work well. Is there anything that the IBM (or clones) can do that your ageing machine cannot? Is it really that important to keep up with the Joneses, Smiths, and Johnsons? If it really is, there is a glimmer of hope.

THE ALTERNATIVE

For those who still insist on keeping up with the computers in the fast lane, who must have the latest for the sake of "being in", there is a WAY, for much less than $1700.

Four of SBUG's members have purchased IBM clone kits and built them for less than $1000. Although they may not be 100%% campatible, the owners have yet to find any MSDOS software that they will not run.

Oh, yes, these four clever fellows are electrical engineers. or computer scientists. They are perfectly willing to share their knowledge with you, so that you too may have your IBM XT clone for under $1000. That's one of the things being an SBUG member is all about; the help that is given and gotten.

It is natural to be concerned about guarantees and repairs. Will these helpful members be around a year from now when your computer begins to fray a little around the edges? Ask yourself where you would go if you had paid full price to a franchised dealer. The answer is that you would go to a computer repair facility (unless you bought a TANDY with an extended one year warrantee).

I have a client that I develop software for, who has an IBM/XT. His drive C failed. He asked me for the the best place to have it repaired. The client payed $67.50 for the repairs which were done that same afternoon. Even TANDY can't do that! The problem was not in the hard drive, it was a dirty cable connector between the controller card and the hard drive.

The same place will repair any IBM clone, too, because the parts are the same. The only difference is the way the Bios (Basic In Out Service) ROM chip is programmed. The Bios program is the only part that IBM has retained copy rights to, and so the only part that clone manufacturers must develop themselves. Some Bios programs are more compatible than others. The Bios program I have in my IBM clone is so compatible that I can run the same system test diagnostics software that the service centers of IBM use. This diagnostics program checks the motheer board, RAM addressing and all peripheral cards such as the video, printer (parallel LPT1,LPT2), communications (COM1, COM2), floppy controller and floppy drives, hard drive controller and hard drives.

The diagnostics software reports all problems to the screen and also stores the problems to a file. The test informs where the problem is by the name of the device and the memory address of the device. The device is then checked for proper installation, clean contacts or and etc.

Since all devices are accessed by the CPU through the Bios program, it is straight forward in detecting problems by their address or interrupt code. There are many good books written about maintaining and repairing you IBM. Some are written so that most anyuone can understand while others go into technical details so that only an engineer or technician could understand them. The right book exists for you. Look through the shelves at the local computer store.

PARTS REQUIRED TO BUILD A CLONE

* Motherboard, stuffed, 256K (or 64K) $239.00
  2 layer board for 4.77 Mhz.
  (stuffed means the board has all chips inserted)
  64K or 256K refers to the size of the RAM chips
  that will mount on the mother board. With 256K
  chips, 640K memory can be on the motherboard.

  A 4 layered motherboard allows using 10Mhz
  processing........ $280.00

* Floppy disk controller card   70.00
  (will control up to 4 drives)

* Case, flip top, to contain motherboard, power
  supply and peripheral cards   89.00

* Power supply, 130.00 watts   110.00

* Video card, Monochrome graphics (Hercules)   130

Color graphics card can also be used for color. Some programs detect color card and send color which is unreadable on a monochrome monitor.

If you choose a color monitor, then use a color card otherwise stay with the high resolution (640x200) monochrome graphics card.

* *Monitor, monochrome, 18Mhz band width, 640x262 pixel resolution*   130.00

* *Multifunction card, contains: parallel printer port, RS232 port, two joy stick ports, additional memory for 640K*   185.00

* *Keyboard, IBM layout with locking key lamps*   109.00

* *Disk drives, 5¼" half height (two)*   178.00

The above system can be purchased as a kit from several stores in Santa Clara County and through mail order (see INFOWORLD and BYTE.) These kits are advertised at $695 plus the monitor. These systems are also advertised as already assembled and tested for $995. Best bet is to buy local from a reputable dealer. Peripheral Land sells the AMERICAN XT with deal floppies, 640K memory, high resolution graphics card and monitor, and a 10Mb hard disk, pre-assembled and tested for $1595.

OPTIONAL EQUIPMENT

* *Printer and printer cable (your choice)*

> *Epson FX85* $499.00
> *Qume 630 Daisy wheel*   1089.00
> *Brother Twinwriter 5 has both dot matrix and daisy wheel in one printer*
> *For high resolution graphics-a Laser printer*   3600.00

* *Hard drive controller card and hard drive half height 90ms avg access time 20 megabytes*   695.00

You may also add if you're so inclined (and the bottom of your purse is not yet in sight), a memory expansion card with power back up and up to 4 megabytes of memory. This little goody is the Companion, by Mega-Omega Systems. The computer can be turned off and the 1 to 4 megabytes of memory retains the data as long as the power module has commercial power. If the power fails, the battery will allow retention of memory for two hours or more. This type of memory can be used for Ram disks and with the new memory hungry programs such as Lotus's new 123, Symphony and Aston Tate's new Framework. Price--$462.00.

And you may continue with 8088 CPU replacement (vm30) which replaces the INTEL 8088 CPU chip and provides faster processing (from 4.77Mhz to 7.15Mhz) $25.00

Would you like a ***** Photo copier...copies photos or any flat surface image into the PC for storage, editing and printing. SpectraFAX digital photocopier is built by SpectraFAX Corp., Naples, Florida. They also have an OCR (Optical Character Recognition) board for inputing text from paper into your favorite word processor. This saves having to retype the text from keyboard. SBUG is in process of purchasing one for the editor.

You have always wanted a ******* TurboSlave by Earth Computers. This is a plug in card with its own 8Mhz Z80h CPU, 128K-2Mb of RAM 2 R232 ports, up to 16 multi-users (about as many as show up for a club meeting,) runs CP/M80 and is transparent to MSDOS......ONLY $494.00

You cannot do without ********** Turbocharger by Univation, of Sunnyvale. This is a plug in card with a 10Mhz 8088 CPU, 512-640K RAM, 10Mhz 8087 math co-processor and IBM BASICA. A switch allows switching from Turbocharger to the original CPU.......JUST $895.00.

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O BRAVE NEW WORLD

It appears that Don is destined to be the Kemal Ataturk of SBUG. He will lift us bodily into the MSDOS century (kicking and screaming?) whether we wish it or not. I am not certain that I am willing to abandon my fez. MSDOS is now. That's good to the extent that it represents a certain standardization. It's bad to the extent that MSDOS is no great shakes as a DOS.

The problem older computer owners (I refer to the age of the computers, not our own) have, is the investment in software, in terms of money invested, time invested in learning the manipulation of the programs and the files laboriously built up, adapted, cleverly (we think) wrenched from the bowels of tortuously written manuals and semi-willing applications.

Another way to go is with Sanyo. See Scottsdale's ad in the COMPUTER SHOPPER for a Z FOX. The basic software that most users need is included along with 640K RAM, monitor. The ad is a little unclear about what you get in the way of drives. On the other hand another FOX is advertised with the same software, 256K RAM, monitor and dual disk drives with 800K each. Priced at $995. A video RAM board to run LOTUS is advertised at $159.

IBM might just be out foxed-- and not by the Japanese. Thousands of people will be following Don's suggestions (even those unfortunate souls who never heard of Don) in putting together clones. I don't think IBM is going to like that, and I don't think they can do anything about it.

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